

### Possible Bandplan

<u>System Channel #</u>	<u>Forward Channel</u>	<u>Back Channel</u>
1	930.025	930.525
2	930.050	930.550
3	930.075	930.575
4	930.100	930.600
.		
.		
.		
19	930.475	930.975
20	930.500	931.000

The plan above subsumes that the Commission assigns the entire 930-931 MHz band for the APS described in the document. Since it is possible that the Commission may assign frequencies for a variety of uses, the guiding principle for APS assignment is that the forward and back channels should be separated as much as practicable. Since the real-world APS receiver/"ack" transmitter must be as small as possible in order to be accepted, and since usable antennas, especially for transmitting purposes, have a physical size and volume which is an appreciable portion of the total size of the entire device, a single antenna for both transmit and receive is extremely important. At the frequencies under discussion this antenna bandwidth is easily achieved.

#### PROTOTYPE RECEIVER/"ACK" TRANSMITTER

Metriplex has spent considerable time in its laboratory facilities developing a prototype of the HDNS receiver/"ack" transmitter in order to establish the technical feasibility of this proposed new service. While the operation of the prototype in the field remains subject to the grant of an experimental license, lab testing has progressed sufficiently to establish that the proposed technology is feasible, and can be adequately developed at a reasonable cost to meet the demand for HDNS/APS services described herein.

The Metriplex prototype, pioneered in the Metriplex lab, consists of a conventional Motorola Advisor alphanumeric pager coupled to a 2W transmitter capable of operation in the 930 MHz region via a Metriplex "Smart Radio Buffer" acting as the controller. Power is supplied by a lithium battery although zinc-air cells are under investigation. The transmitter is coupled to a small stub antenna. At this time, antenna pattern and gain measurements are being conducted to determine the optimal design characteristics.

The prototype is approximately 4.1" x 3.5" x 1.9". The antenna protrudes approximately 2" above the otherwise rectangular package. The size and appearance of the antenna are critical to its acceptability in the paging marketplace. Average power consumption is approximately 30mw, assuming an average of

eight messages per day with "ack". A significant portion of the power budget is devoted to processing tasks and will be reduced as the firmware is refined. A picture of the "Ack" pager is enclosed. It is critical to emphasize that while frequency testing has not yet been completed, pending the grant of an experimental license for which applications are being prepared, the hardware, firmware and software development for this product, and for the HDNS itself are sufficiently mature in Metriplex laboratory processes to adequately establish that the proposed service is feasible and that it will be marketable at price levels that current and future paging subscribers will find extremely attractive.

**CONCLUSION**

For all of the above reasons, Metriplex, Inc. requests the award of a Pioneer's Preference for a license to Metriplex to construct a new High Speed Hybrid Network with Acknowledgement Paging in the 930-931 MHz band on a nationwide basis. Metriplex has demonstrated its pioneering achievements in this exciting new technology and urges the expeditious establishment of this service and the implementation of a frequency allocation in the 930-931 MHz band to meet the requirements of this new service.

Respectfully submitted,

METRIPLEX, INC.

By: 

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# on data: Data Steals the Show

A practical way to sell alphanumeric receivers and a new device for cellular data transmission were among the most interesting products at the Telocator Semi-Annual Meeting.

ALAN A. REITER

**T**here are many sad combinations of words. An especially pathetic one begins: "If only. . . ." If you hear someone mouthing those two seemingly harmless words, run—unless you want to be subjected to a tearful tale of what "might have been . . . if only."

"If only . . . I had bought a house back then."

"If only . . . I hadn't married so early."

"If only . . . I had flossed."

"If only . . . I had sold out to Metromedia."

"If only . . . I hadn't sold out to Metro-media and waited for PacTel."

Very sad.

A particularly well-worn phrase, one with distressing denotations for me, is: "If only . . . I had bought that stock." How many of us were all set to plunk down some cash for a public offering when better (supposedly) judgment intervened? Inevitably, the stock skyrocketed while your financial outlook plummeted. Just as exasperating, perhaps even worse, is actually buying the stock—but being greedy. You hold out for that extra point—and the market collapses along with your dreams of a Ferrari or a set of new tires.

Until the human species gains greater wisdom or the computer not only makes the correct decision but also physically pushes you into the broker's office, pecuniary catastrophes will be a depressing fact of life. But help is on the way and the poorly selling alphanumeric pager is a key ingredient.

A major reason for alphanumeric paging's failure is that it's being sold as a traditional *pager* (see *Telocator*, "on data," November 1985). As a "pager" it's too heavy, too complicated and too expensive. Its success, I'm convinced, is dependent on being marketed for what it is: a portable data receiver. As such, it's lightweight, easy to use and inexpensive. But, like a computer, it needs *telecommunications* and *applications* software. It must be easy to send data and the data must be more than just "call your office."

## Help is on the Way

Enter two computer software and hardware designers who displayed their stuff publicly for the first time at Telocator Network of America's Semi-Annual Meeting in Baltimore. They've developed an applications program for alphanumeric receivers that could spark renewed interest in alpha. Marc Stutman and his brother Steve have established Metriplex Systems in Cambridge, Massachusetts. Marc is a financial software programmer and designer and Steve is a consulting electrical engineer and designer of biomedical and oceanographic equipment.



Marc Stutman of Metriplex Systems explains "Stockwatch" at the recent Telocator Semi-Annual Meeting in Baltimore.

Their goal, concisely stated in a product brochure, is: "transforming the alphanumeric pager from a 'beeper' to an information receiver." Their product is Metriplex StockWatch, a program for IBM PCs and IBM-compatible micros that will automatically send stock quotations to a Motorola Optrx receiver. StockWatch also requires a Hayes modem or Hayes-compatible modem, at least one floppy disk (two are recommended) and 192K of RAM.

The software keeps track of a maximum of fifty issues: stocks, options and commodities, plus financial indices. In addition to monitoring price, price change and volume, StockWatch also sets off audible

alarms for parameters you set, such as when the price of a stock increases or decreases a quarter of a point. Here's how it works:

You must first "install" the program. You must tell it, for example, whether to transmit at 300 bits per second (bps) or 1,200 bps, which is the standard today. You also type in the telephone number of the financial quotation service to be accessed, the number of any of the low-cost long distance services (such as Telenet), the pager telephone number and its ID number. The program uses the quotation service provided by E.F. Hutton's Huttonline.

Marc Stutman explains that Huttonline is preferred because it's inexpensive. Obtaining ten stocks from Dow Jones News/Retrieval could cost \$2 compared to \$.16 from Huttonline. Once the set-up parameters are set, you then decide which issues you want monitored and when you want them checked. For example, you would tell the program to monitor IBM from 07:00 to 15:00 (it uses military time) and then to contact Huttonline every five minutes, 00:05. To eliminate costly exchange fees, the data are delayed fifteen minutes instead of being broadcast in real time.

Every five minutes, StockWatch automatically calls Huttonline and updates your computer screen. It also automatically transmits the data to the RCC's paging terminal where it is relayed to the Optrx. The first line of the Optrx displays the issue's symbol and volume. The second line displays the current price and the third line displays the change in price.

There are two other useful features. The software can generate files which can be read by the Lotus 1-2-3 spread-sheet program so you can analyze the data. Also, StockWatch creates a detailed log of every time you used the program. This feature alone could pay for the program because the Internal Revenue Service requires that computer users (especially home users) maintain a usage log to justify deductions for hardware and software.

The IRS wants to make sure, obviously, that business deductions are based on business use and not on shooting down Russian MIGs with your game program. Of course, justifying StockWatch use as a legitimate business deduction is your own problem, but at least you can show the IRS a printed record.

I tried out the 99.99 percent-ready-for-shipment version at the Telocator convention and found it easy to use, even without the manual, which I didn't see. There are no online "help" screens. However, StockWatch will tell you if you've made a mistake and indicate the area of the program where the mistake was made. It also displays a number on the screen which you can look up in the manual to determine the exact nature of the mistake.

For example, after I told the program to track IBM from 07:00 to 15:00 and then asked it to run, it displayed an error message. I had forgotten to indicate how often StockWatch should call Huttonline.

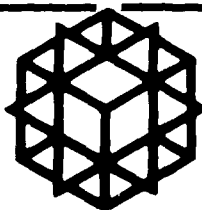
StockWatch is an *end user* program. The subscriber buys the software on a non-copy-protected floppy disk for \$189. It seems like a fair price, although some RCCs have asked how much they can mark it up. That's not the idea! It's the pager and the airtime that carriers are selling. The retail price certainly includes a profit margin, but StockWatch is the razor and the airtime is the blade.

For several months, Metriplex has been testing the product with Metromedia in Boston. By the time you read this, subscribers should be using StockWatch in the New England area, where Metromedia has an exclusive contract with Metriplex. The first users will be in Massachusetts, Rhode Island and New Hampshire, says Marc Stutman.

Before deciding on RCC frequencies, Metriplex investigated FM radio subcarriers over which several sophisticated financial quotations systems are broadcasting. However, Steve Stutman concluded that subcarriers just didn't provide adequate penetration in large cities. And, the potential of alphanumeric receivers wasn't being exploited, he decided.

StockWatch is the first applications program for alpha. It answers the question that many computer users have asked: "I've got the hardware, but what can I do with it?" If you've read November's "on data" you know I'd like to see an inexpensive, RAM-resident communications program that can be used to transmit alphanumeric messages. Perhaps StockWatch could add such a program.

Steve Stutman notes that the version I saw was just the *first* version ready for commercial use. Steve and Marc are working on several other applications programs along with additional features for StockWatch. For RCCs interested in the future of alphanumeric receivers, Metriplex is a company to watch.



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# Put Wall Street in the Palm of Your Hand with Metriplex/Stockwatch™

**STOCKWATCH**, the automated stock quote monitoring software which combined with an alphanumeric pager, provides the user with a portable stock alarm system. **STOCKWATCH** monitors quotes and automatically pages the user without operator intervention whenever preset price or volume limits are exceeded. The program runs on IBM-PCs® or compatibles equipped with a Hayes® modem.

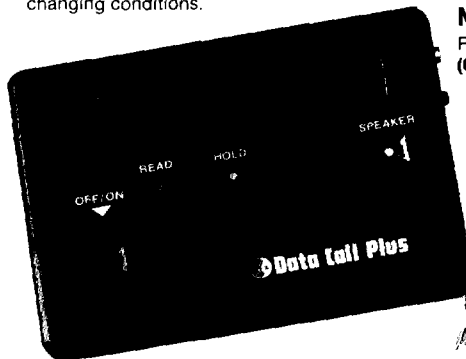
**STOCKWATCH** has been designed for people who don't have time to watch the financial markets, but want to be alerted to changing conditions.

- Software runs unattended — auto retrieval of information
- Potential tax writeoff — **STOCKWATCH** generates a computer usage log which can be used to substantiate tax deductions
- Simple, easy-to-use — all commands are single keystroke
- Low cost
- Operates with **NO MODIFICATION** to existing equipment



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# Personal computers and alphanumeric paging

*Alphanumeric pager sales will increase dramatically as IBM-PC compatible software is developed, enabling simple communication with alphanumeric paging terminals.*

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**By Marc and Steve Stutman**  
Metriplex Systems

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In the same way that IBM-PC sales took off once software became readily available, alphanumeric pager sales will

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*"While many people  
are acquainted  
with pagers . . .*

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explode once personal computer (PC) software is available, allowing easy, automatic input of information to alpha paging terminals. Metriplex Systems manufactures software that turns a PC into an alpha messaging terminal. Since millions of IBM-PCs already are in the corporate and professional workplace, alpha paging software and alpha pagers

using this existing base of machines will find a ready-made market. Only by eliminating the user input bottleneck can alpha use be increased substantially.

When the IBM-PC was first introduced in 1981, sales were acceptable, but not spectacular. Once software packages such as Wordstar and Lotus 1-2-3 became available, many business and professional users found that personal computers became a valuable, integrated part of their workplace. Many people who never thought they would touch a keyboard find themselves using a PC today. This familiarity with PCs helps with the implementation of easy-to-use, automated techniques that the alpha user can use to enter messages to the RCC, and break the input bottleneck. Until recently, the missing component was the software.

## **Alphanumeric identity**

Historically, it has been demonstrated that some of the best and ultimately most profitable ideas and inventions don't sell well until they can be easily used and integrated with existing equipment bases and customer requirements. Furthermore, these new products must

be positioned properly to gain a strong and unique market identity.

While many people are acquainted with pagers, the alphanumeric paging concept is unfamiliar to them. There are two reasons for this. The first is that the difficulty encountered in entering mes-

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*. . . the alphanumeric  
paging concept is  
unfamiliar to them."*

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sages precludes greater use and resulting exposure. The second is confusion resulting from the use of the term *alphanumeric*.

Software that enables a PC to send messages to the RCC can solve the first problem. The second must be solved by changing current industry jargon.

Naming units that only show numeric

characters, *display* pagers, clouds the relative meaning of the term *alphanumeric*, which is itself obscure to the general public. *Information receiver* or a similar word should be used. It would be more descriptive to the public and would

differentiate this type of device as a premium component, not just "another pager."

Three methods are used to enter alphanumeric messages. These are:

(1) Intercession of a human operator.

(2) Use of various dedicated terminals.

(3) Use of IBM-PCs already in place with appropriate terminal software.

Messages sent via an operator require the message originator to call the opera-

## Software packages add uses to alphanumeric pagers

Metriplex Systems has developed two IBM-PC compatible software packages for alphanumeric pagers.

The first product, STOCKWATCH, is an automated stock quote monitoring software program that, combined with an alpha pager, provides the user with a portable stock price alarm system. The program monitors quotes and automatically pages the user, providing readout of pertinent information whenever user preset price or volume limits are exceeded.

It is designed for those who don't have

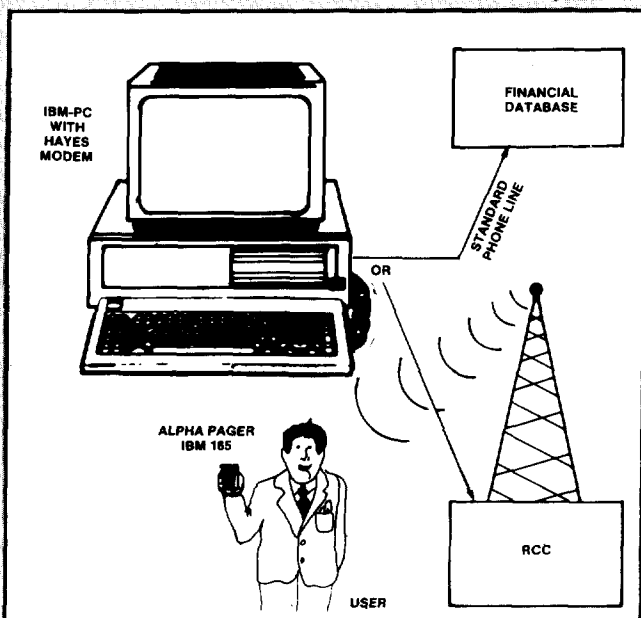
time to watch the financial markets, but want to be alerted to changes.

The software runs unattended while automatically retrieving information and sending messages to the pager. The program generates computer use that can be used to substantiate tax deductions. (See Fig. A.)

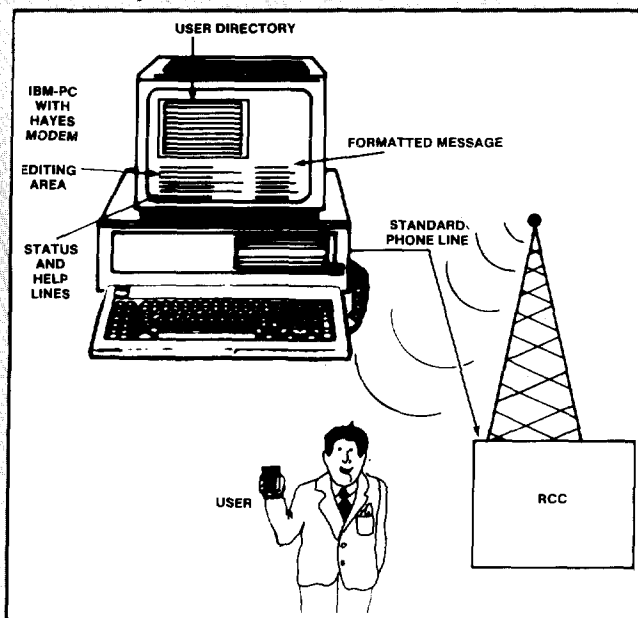
PcPAGE is message entry software that makes messaging easy. It is a RAM-resident, terminal software program that turns an IBM-PC with a Hayes modem into an alpha message terminal. The pro-

gram has a pop-up menu that lets the user suspend his current program (e.g., word processing), send an alpha message, and then resume the program. No extra dedicated equipment is required.

The program shows how the message will appear on the pager, frame by frame. It has a user directory with a "find" feature. The program automatically logs the date, time, message text and destination to disk and/or printer. Group paging and batch mode are offered by the program. (See Fig. B.)



**Fig. A—Stock market program works as follows:** (1) User specifies stocks and presets high/low prices and volume limits. (2) PC automatically retrieves stock prices from financial data base. (3) PC compares current price with user limits. (4) If limits are exceeded, PC dials the RCC, sends message including stock symbol, volume, price and price change.



**Fig. B—Paging program allows current program (a word processing program, for example) to be suspended while an alpha message is sent. The screen displays a directory and shows how the message will be formatted on the paging receiver. It automatically logs date, time, message text and destination to a disk or to the printer associated with the PC.**



tor, speak the pager ID, speak the message and have the message repeated by the operator to ensure accuracy. The operator, in turn, must then enter the message to the RCC. Because two people are speaking to each other, there is significant possibility of error. In the case of medical information, stock market prices, or the time of a critical meeting, the cost of a garbled message may be high. Also the operator's time, terminal equipment and other associated overhead result in substantial per message cost to the RCC.

There are various terminals in use that are dedicated to the alpha messaging task. Their message entry protocols are often difficult to use and their display screens are usually capable of displaying only a few characters or small messages. Users are generally dissatisfied with the operation of these terminals and resist buying them because of cost. Many RCCs are forced to absorb some or all of the cost of these input devices because the customer further argues that they have only one use. Another

objection to the dedicated terminals is that they occupy desk space and increase clutter.

Metriplex Systems offers two trademarked software programs, Metriplex/STOCKWATCH and PcPAGE. They transform an IBM-PC with a Hayes

*"... alpha paging software  
will help sell...  
hundreds of thousands  
of alphanumeric pagers."*

modem into an automated stock market price quote monitoring system or a multifeatured alpha messaging terminal. The computer equipment is owned already by millions of potential alpha users. With appropriate software, an easy connection to an alpha system is

possible. Studies show that a computer owner or user is much more likely to purchase software that adds capabilities to existing hardware, than he is to purchase a piece of dedicated and potentially outdated hardware that performs a similar function. The price-to-performance ratio for PC software is also much higher than it is with dedicated equipment.

#### Marketing approach

An RCC can optimize the potential for successfully marketing a paging system's alpha capabilities by following these guidelines:

(1) Sell IBM-PC compatible software that utilizes the alpha pager's capabilities.

(2) Aim the alpha pager or *information receiver* at the premium market such as executives, stock brokers and physicians. Stress the greater utility, flexibility, and perhaps status value of the information receiver and differentiate it from other types of pagers.

(3) Demonstrate that messages may be sent from the users offices easily, using equipment already installed.

When combined with the light weight and small size of alpha pagers made by such manufacturers as Motorola and NEC, the overall information delivery system is neat, non-intrusive and simple to use. It is much more convenient and economical than other alternatives.

#### Summary

RCCs can increase alpha paging revenues by obtaining appropriate PC messaging software and bundling it with their pagers. Alpha pagers are very versatile, but unless information can be input easily and accurately, their full potential will never be realized. As IBM-PC software has helped sell millions of PCs, alpha paging software will help sell tens of thousands if not hundreds of thousands of alphanumeric pagers. **TC**

*Steve and Marc Stutman co-founded Metriplex Systems, based in Cambridge, Massachusetts. Metriplex has developed two IBM-PC software packages used in conjunction with alphanumeric pagers.*

## Gentlemen, Start Your Alphas with PcPAGE™, from Metriplex Systems

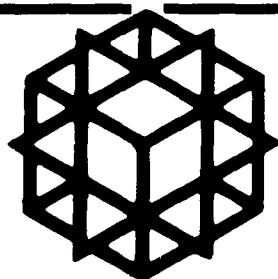
Alphanumeric paging sales have lagged behind expectations because it has always been difficult to input alpha information. But now there is PcPAGE, the RAM-resident, terminal software program that turns your IBM-PC into an alpha message entry terminal. Its pop-up menu lets you suspend your current program (e.g. word processing), send an alpha message, and then resume the program.

- Shows how message will appear on pager, frame by frame
- Pager/User directory
- Automatic logging — date, time, message text, and destination are logged to disk and/or printer
- Group paging
- Simple, easy-to-use
- Very low cost

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# Making Money with

# ALPHA

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Carriers who make the necessary  
commitment and develop the right  
marketing plan will find success  
selling alphanumeric pagers.

## Marc and Steve Stutman

**A**lphanumeric pagers offer a number of very useful and unique features, yet it is generally agreed that they are selling at a rate that is far below expectations. Why? This article will examine alpha pager sales and offer some suggestions for improving them.

The public perceives alpha pagers as a new technology and lacks familiarity with their use. The difficulties currently experienced in marketing alpha pagers are no different than those experienced with other new systems or technologies. Market perceptions from both within and outside the industry must be changed in order for this new technology to be absorbed into the mainstream of daily life.

It is interesting to note that after the ENIAC (one of the first electronic computers, *circa* 1946) was built, the general consensus was that the world would never need more than two of these systems because of their tremendous speed and power. Yet ENIAC had perhaps 20 percent of the power of the typical personal computer now found in the average office.

Consider another example: Market research done in the late sixties and early seventies stated conclusively that com-

puters would remain huge behemoths grinding away in laboratories and large offices; a few minicomputers would be thrown in for good measure. Yet there are now over 11 million IBM PCs and equivalents in use, with 78 percent of them in the workplace.

In both of these cases, people didn't realize that there was a far larger potential user population that would develop only when exposed to the new technology. The key in both instances involved making the technology available and relatively simple to understand and use. In turn, the public developed many more uses than would have been the case if the technology had been restricted to a few large laboratories or corporations. In general, people would rather integrate new technologies into their existing environment than completely change the way they do things.

Keeping these observations in mind, the principle factors limiting alpha sales are: (1) lack of product understanding; (2) failure to identify and focus on specific market segments; (3) lack of comprehensive solutions to customer requirements; and (4) difficulty encountered during message input due to a lack of suitable input systems.

### Alphanumeric Identity

Many people are familiar with tone pagers. The public may not exactly understand their operation, but the term "beeper" is well understood. With numeric display pagers, this understanding is stretched; we have overheard a few users remark that the "numbers go from the telephone to the pager." While this explanation is essentially valid, one can see that the user's understanding is diminishing.

When one talks about alphanumeric pagers the real trouble begins. First, the nontechnical people don't know what "alphanumeric" means. A better term might be "information receiver" or "personal communications receiver." This more descriptive term is better because it implies much more than the term "beeper" does. Alpha pager is to beeper as Porsche is to bicycle. Frankly, an alpha pager or information receiver is a completely different product and should be marketed accordingly (see sidebar, "Pager Comparison").

Second, after the term "alphanumeric" is explained, the inevitable question is, "How do I send a message to the pager?" The potential customer can see the message on the pager display but doesn't really grasp the whole concept because he or she doesn't see how the message was entered.

Although showing a dedicated message input terminal can help, it is unfamiliar equipment and frequently makes the customer uneasy. Alphanumeric messaging software that runs on the industry standard IBM PC, such as Metriplex Systems' PcPage, puts the customer at ease because it utilizes well-known equipment.

### Market Segments

The alpha paging market can be broken down into two broad categories: (1) existing customers who can be upgraded and (2) new market segments. The first group may present some price resistance even after the benefits of alpha are demonstrated. However, you can show them that alpha is ultimately less expensive than tone or numeric display in most applications (see sidebar, "The Price Issue").

There are a whole host of potential new market segments for alpha paging, including the following:

☐ *High-end.* This segment includes stockbrokers, investors, money managers, executives, physicians and lawyers. These people will tend to be less sensitive to price; service and reliability are the most important factors. With this group time is extremely valuable,

but only physicians widely use pagers. Few if any lawyers use alpha pagers, yet they are often on the move and in need of being reached.

Stockbrokers comprise a completely untapped market, yet they have clients who keep busy schedules, are difficult to reach and have their personal fortunes at stake. A stockbroker whose clients utilize alpha pagers would be able to reach them whenever necessary. For example, the broker could send the price of gold to all of his or her gold-trading clients in less than a minute.

Professional clients appreciate the discretion that is provided by alpha pagers (i.e., conversations are not overheard). Also, they are often trying to avoid the telephone because they don't want to engage in lengthy conversations. An alpha message would get the information across quickly and effectively.

☐ *Emergency.* This segment includes fire departments, ambulance services, plant and building security guards and other emergency-response teams. Alpha presents an advantage to emergency services delivery in terms of more accurate reporting of vital information, faster response time (since the alpha user does not have to call back to a central dispatch to receive the necessary information) and the ease in which the alpha user can reference the information which is stored in the pager a second time.

☐ *Package and freight delivery.* Local and long-distance truck drivers would be prime candidates for alpha pagers coupled with vehicle-mounted printers, since deliveries and pick-ups are always changing. Also, drivers are often away from their trucks, so the ability to get printouts would be important. The Northeast Corridor or the West Coast Corridor would be excellent markets for this service. Package delivery companies are prime alpha candidates. Who will be the first radio common carrier to pick up United Parcel Service (UPS) as a client?

☐ *Noisy areas.* In noisy environments, alpha is an excellent way to communicate. People working in boiler and machine rooms, manufacturing plants and on airline maintenance and baggage crews are prime candidates for alpha.

☐ *Field repair technicians.* Computer and business equipment technicians make up another group that would benefit greatly from alpha pagers. A message could describe the customer's problem and suggest the part numbers required for repair. The technician could check his or her on-road inventory and

**Alpha paging is beginning to take off now that PC message software is available.**

## Alpha is ultimately less expensive than tone or numeric display in most applications.

head for the nearest depot to pick up any required parts without calling in. Additionally, a vehicle-mounted pager/printer could log long part-number lists or route instructions.

☐ *Government.* State and federal legislators could be kept abreast of important votes while in conference. Also, they could receive vital information discreetly while in session.

☐ *Other markets.* Other promising markets include construction, traveling sales, newspapers and other media and utilities.

These are just a few prime candidates for alpha paging. There are many other market segments that are largely untapped.

### **Making the Commitment**

In order to turn alpha pagers into moneymakers, it is necessary to commit the necessary human and financial resources. The first step is to set up an alpha sales team. Alpha salespeople will need to be better trained than the typical paging salesperson. Many alpha sales will be in upscale, relatively sophisticated markets.

Selling tone and numeric pagers can be done with little training. On the other hand, alpha account executives must be familiar with alpha's unique capabilities as well as with the use of personal computers like the IBM PC. Metriplex Systems' PcPage message entry software makes this familiarity process easier because it is simple to use yet very powerful.

Your company should have PCs available exclusively for use by your alpha salespeople. You may want to consider the Sharp PC7000 or the Toshiba T1100 Plus—they are both easy to carry, have good displays and are IBM-compatible. A salesperson equipped with a portable computer can demo your alpha pager's full capability within minutes, since all he or she has to do is plug the phone line into the modem and turn on the PC.

As we all know, customers appreciate quick demos that work well. You will find that demos performed with a PC are most effective because customers already know what a PC is. Demos done on dedicated terminals produce quizzical looks from customers who have never seen such terminals.

When doing demos, always bring your own equipment (i.e., a portable PC). Your customer's PC is probably being used by the accounting department and he or she may not have a modem. Having done hundreds of

demos, we have learned to assume nothing. The alpha salesperson should carry phone (twenty-five feet) and extension (ten feet) cords. It's difficult to sell someone on the benefits of alpha if your phone line doesn't reach the jack.

Software makes alpha work, so you should have the right software with you. When the IBM PC was first introduced in 1981, sales were acceptable but not spectacular. Once software packages such as Wordstar and Lotus 1-2-3 became available, many business and professional users found that personal computers became a valuable, integrated part of their workplaces. Would you buy a computer that didn't have any software? In the same manner, alpha paging is beginning to take off now that PC message software is available.

### **The Marketing Plan**

Of course, before you can make your sales pitch you have to develop a marketing plan for reaching your target markets. Your marketing plan should include the following five steps:

☐ *Canvas your existing customer base.* What industries are they in? Do they already have PCs? Show your customers how alpha pagers can save them time and money. The first question many customers ask is, "Why should I pay more for an alpha pager?" Customers should be given a flyer or brochure explaining alpha's benefits, some of which are not readily apparent. Also, many customers would probably upgrade to alpha after seeing a demonstration.

☐ *Define your target markets.* Choose those markets where a few minutes makes a big difference or where constant rescheduling is a fact of life.

☐ *Prepare a direct mail piece aimed at the communications managers in your target markets.* Identify their communication needs and illustrate how alpha will fit in. Do a cost-benefit analysis and show how alpha will save them time and money.

☐ *Follow up the mailing by calling each of the managers.* Try to arrange a demo—it won't take more than fifteen or twenty minutes if your salespeople are properly trained and equipped. Remind your potential customers that you are not showing them just another pager but a new, yet proven, communications technology.

☐ *Go to trade shows and arrange in-house demonstrations.* This will expose alpha pagers to people who may have never considered owning pagers before.

### Selling Alpha

Those customers who have PCs and are considering leasing pagers will probably want alpha. But what about those people who don't have PCs in their offices? Some RCCs are giving PCs to customers who lease thirty or more alpha pagers. You might also consider leasing a PC to your customer.

Generally, the customer will want an integrated solution: a PC with a modem, message entry software and alpha pagers. Be prepared to provide the full package yourself or through a local computer store.

In summary, if you want to sell alpha paging you must commit the necessary

human and marketing resources. Without well-trained and equipped alpha salespeople, your chances of selling alpha are reduced. RCCs who want to be full-service paging companies and who present alpha pagers as information receivers will find alpha to be financially rewarding. ■

*Marc and Steve Stutman are the owners of Metriplex Systems, a Cambridge, Massachusetts-based software firm specializing in alphanumeric paging software.*

**Alpha salespeople must be familiar with alpha's unique capabilities as well as with the use of personal computers.**

## The Price Issue

We all know that alpha costs more. If price resistance is encountered with an existing customer, a simple cost-analysis will show that not having to call back to get the message will pay for itself monetarily, let alone in time saved. Having to stop and make a phone call is a tremendous irritation in the middle of a traffic jam.

Let's look at the following example:

Tone and numeric paging involve a two-step messaging process: receive the page, then call to get the message. Each time

you are paged, you must call in to find out what the message is. Assume four tone or numeric pages per day:

$(\$0.25/\text{phone call}) \times (\text{four phone calls/day}) = \$1.00/\text{day}$

One dollar a day for one month is over \$20 per month.

In most cases, alpha messaging is a one-step process; there is no need to call in to get the message. Since alpha does not require a phone call, the monthly savings (\$20) will often pay for the upgrade.

## Pager Comparison

This chart is a comparison of the relative benefits of each pager type. It's easy to see that alpha pagers are in fact "Information Receivers." A chart like this would be useful when upgrading existing customers to alpha.

BENEFITS	ALPHA	NUMERIC	TONE
Tone alert	Yes	Yes	Yes
Numeric alert and display	Yes	Yes	No
Message alert and display	Yes	No	No
Doesn't require telephone to obtain message	Yes	No	No
Saves money and time by eliminating phone calls back to the office	Yes	No	No
Message can be received and understood in high-noise environments such as plants and machine rooms (where phone can't be used)	Yes	No	No
Group page is useful because the entire group need not call back at the same time to obtain the message	Yes	No	No
Pager stores entire message, eliminating the need to write it down for later reference	Yes	No	No

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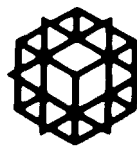
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# Wall Street

## Computer Review

### COMMUNICATIONS

## Receiver Keeps Mobile Investors Market-wise

**I**n the near future, investors may join doctors and field service technicians among the population of beeper carriers. **Metriplex Systems Inc.**, a Cambridge-Mass.-based telecommunications company, has recently introduced **Stockwatch Plus**, which sends alphanumeric data to hand-held paging devices.

Stockwatch Plus uses UHF signals and data from Standard & Poor's

out of leaving your office," says Lewis J. Horowitz, president and CEO of the New York Futures Exchange.

This product also doubles as a personal message receiver. To leave a message for a Stockwatch Plus user, a caller dials a toll-free number and leaves a message for the recipient's personal beeper number. Within seconds the message goes out over the radio waves. On the receiving end,

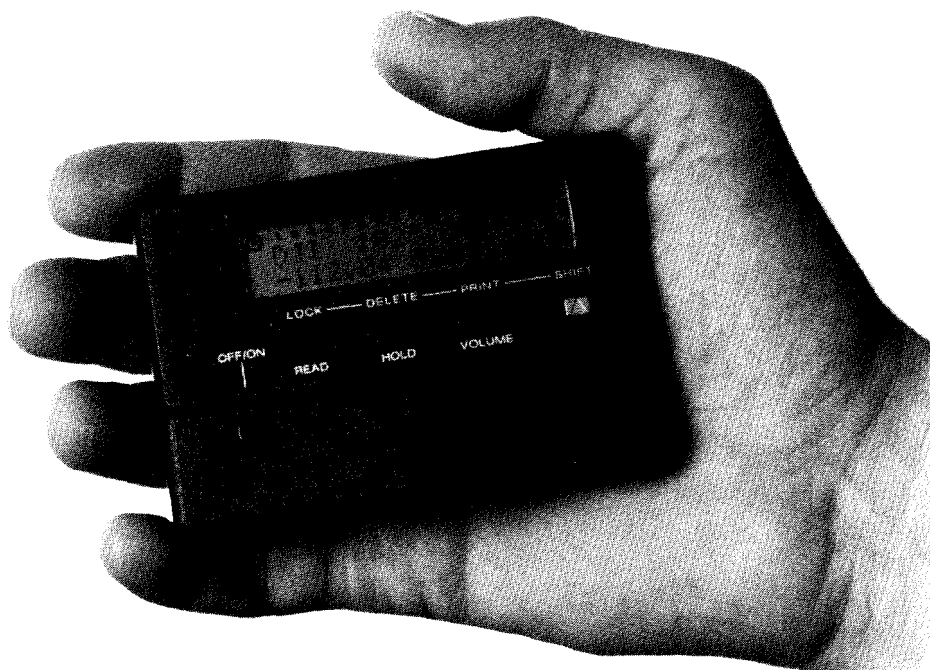
reference.

"It offers the best transmission I've ever seen and the engineering is excellent," says Roy Fairchild, director of market data sales for U.S. and international clients at the New York Futures Exchange. Says one trader, "I've received the information in cabs, in planes and on my way down into the subway."

Jack T. Adler, an insurance executive with the Mesirow Financial Corp. in Chicago, uses the service both to watch stocks and to stay in touch with his office. "Even my cellular phone can't keep me up-to-date with my portfolio," states Adler, "Receiving up-to-the-minute information about specific stock price or volume movements that are important to me is an outstanding feature of Stockwatch Plus. It lets me know when I need to call my broker by alerting me to movements in issues that are key to my investment plans. It also allows the office to keep in touch with me when I'm out in my car" he adds.

The "market watch" function will serve investors, money managers, and other people who need to be apprised of up-to-the-minute pricing changes. The founders of Metriplex suggest that brokerage houses make Stockwatch Plus available to their customers. That way, in addition to the pricing broadcasts, brokers themselves can transmit individualized market summaries to their clients.

Since users may choose to receive the Metriplex signal by a beep, a vibration, or a light, the service is ideal for high-noise environments. Says Roy Fairchild of the New York Futures Exchange, "The possibilities for traders are great. Within seconds, a senior trader could transmit key info out to his staff on the floor."



*Stockwatch Plus, from Metriplex Systems, Cambridge, Mass., transmits real-time quotes to clients' alphanumeric pagers.*

Ticker III real-time pricing service to notify a subscriber of price changes in a particular index or an individual stock by beeping his pocket-sized receiver.

"Stockwatch Plus takes the fear

the signal beeps, flashes or causes the user's device to vibrate. The user may then hit a read button and receive the actual message on the mini telex-like screen. The message can also be saved in memory for future



# When The Pros Want Messaging Software They Call Metriplex.

## Communications

BT Telephone  
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**Upgrades** - Return your original PcPage 1.1 disc with the application uninstalled and \$8.00 shipping and handling and we'll send you the latest version of PcPage 2.0. The price for larger orders is \$250.00 for 10 disks

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			Shipping	
			C.O.D.	
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# In An Emergency Who Does 911 Call For Software?



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Dreams do come true. Now you can own our best selling PcPage 2.0 for only \$249.00.

With PcPage you can use your PC to send messages to a Pager the same way you send E-mail or a Fax.

It's easy. All's you need is an IBM compatible PC (AT or higher), a Hayes or Hayes compatible modem, an alphanumeric pager and service from your local paging company.

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You can also send messages locally, regionally or nationally. Each message is logged and time stamped by pressing a single button. Up to 10 preset messages can be stored for easy distribution.

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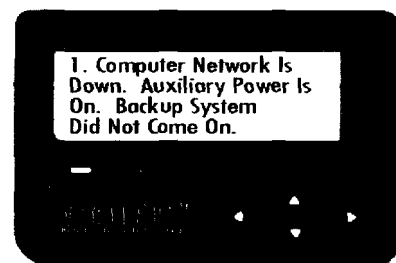
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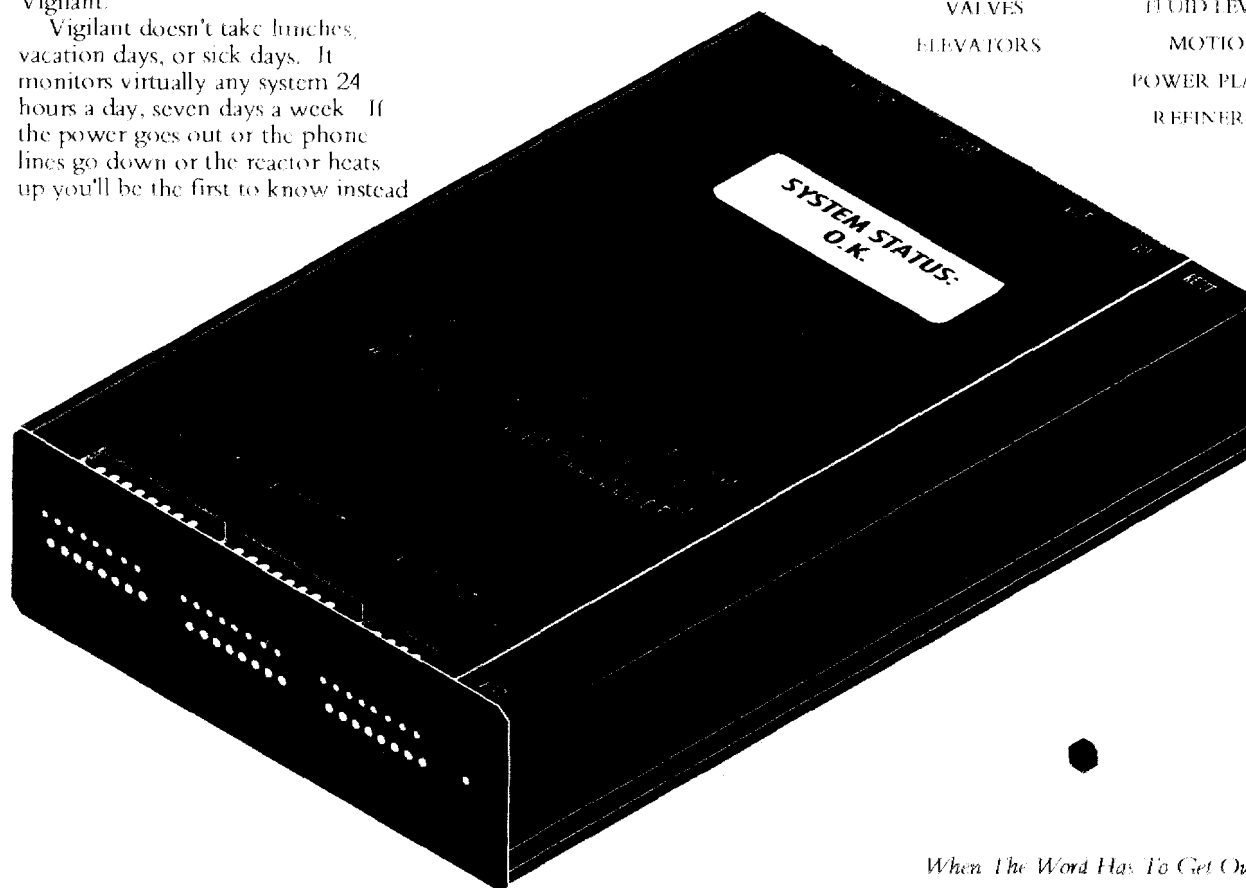
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Last year Metriplex sent out 36 million messages without a single hardware or software error. We're the world leader in the transfer of wireless data.

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UTILITIES	PRESSURE
MOTORS	VOLTAGE
PUMPS	CURRENT
VALVES	FLUID LEVELS
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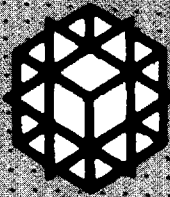
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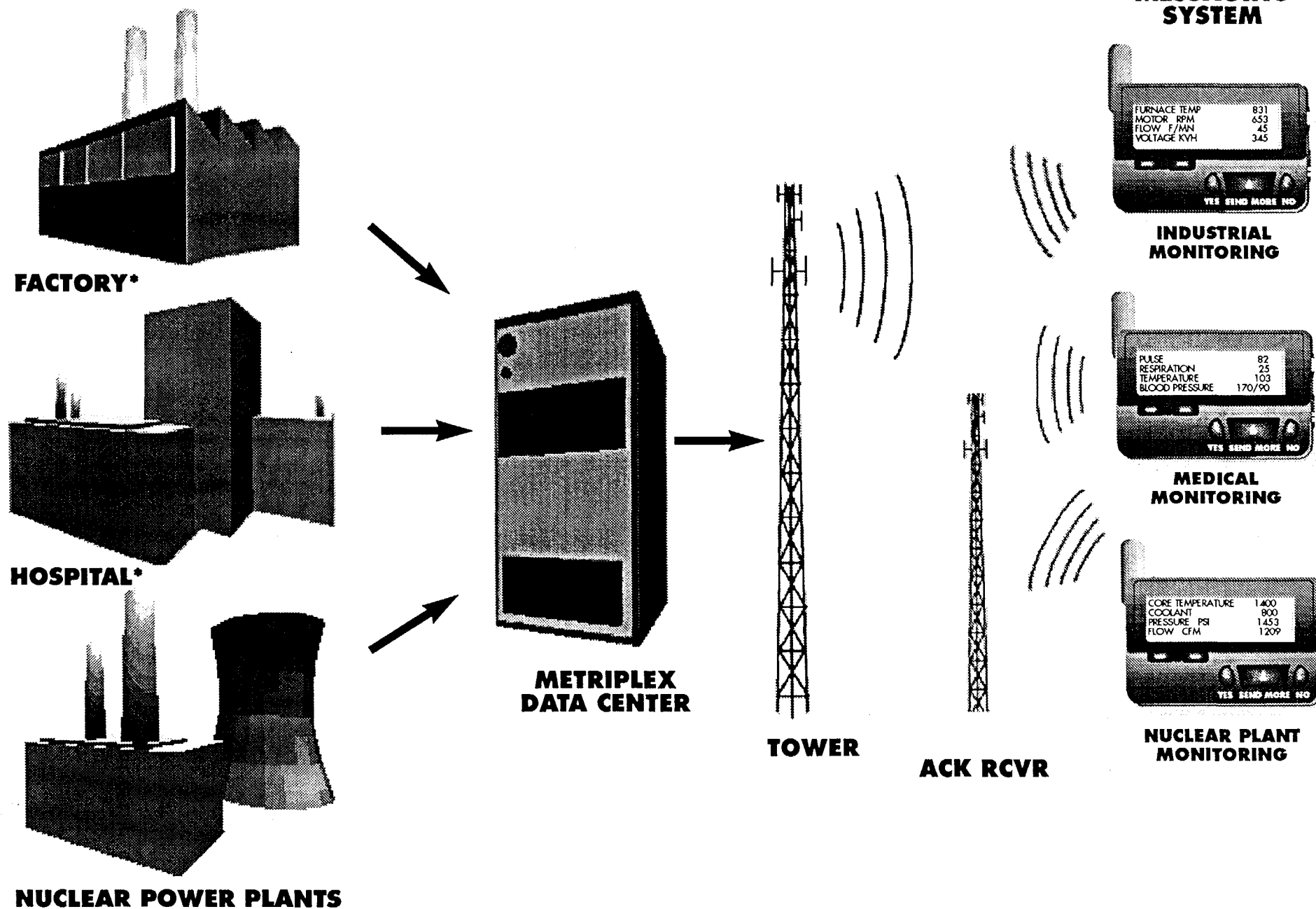
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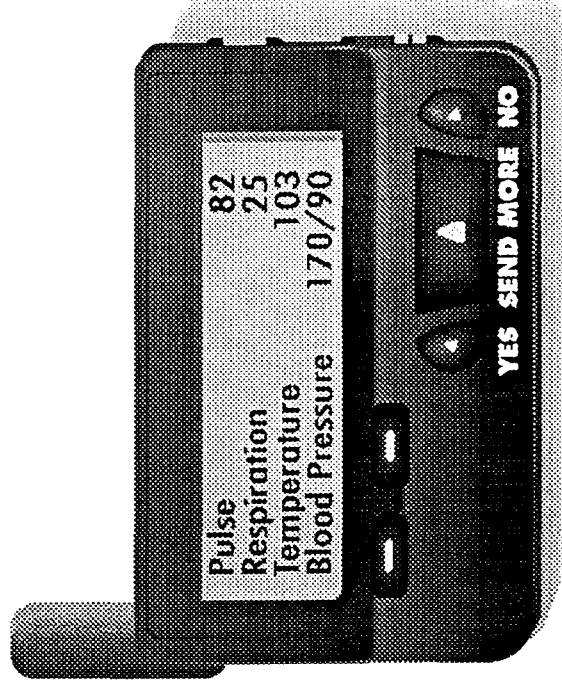
Mercedes, courtesy of Trans-Atlantic Motors, Inc., Hingham, MA

# DATA TELEMETRY APPLICATIONS



\*CURRENTLY IN BETA TEST

# "ACK" PAGER



# INFORMATION GATEWAY FOR HDN

